

Séminaire de théorie des nombres

Le 04 mai 2026 à 14h (PRG)

Purity theorems over valuation rings

Exposé de Ning Guo
(Harbin Institute of Technology)

Résumé : This talk presents recent results on purity theorems over valuation rings. We begin by investigating the Hartogs extension phenomenon for smooth algebras over valuation rings. We then discuss Zariski-Nagata purity, focusing on finite étale covers.

To support these geometric results, we review the homological characterization of normal coherent rings, such as Serre's (R_1) and (S_2) conditions, can be formulated using homological invariants like depth and weak dimension in the coherent, non-Noetherian setting.

Finally, we analyze cohomological purity, specifically establishing the purity of Brauer groups for syntomic algebras over valuation rings by using perfectoid techniques of Česnavicius-Scholze.